

26th March 2020
Mr Duncan Selbie
Chief Executive
PHE

Dear Mr Selbie,
Improving the protection of Health Care Workers

I am sure that you are already aware of the concerns among front-line NHS health professionals about both the adequacy of the provision of Personal Protective Equipment (PPE) alongside concerns that the policy is not being adequately applied. I have no doubt that you will agree that our first priority in this pandemic has to be the protection of Health Care Workers (HCW), both to prevent harm to them and to maintain the service to the public.

In that regard we write to raise our specific concerns about the competence of the generic occupational health and safety risk assessment which has informed the advice about the safety and protection of HCW during the COVID-19 pandemic written by a number of official bodies including Public Health England.¹

Numerous colleagues, both publicly and privately, have expressed concern to us about the recommendations for Respiratory Protective Equipment (RPE) as part of the PPE ensemble. This has led us to review the documentation and evidence base to which the guidance refers.

Your advice seems to be largely, but not exclusively based on the on the Offeddu et al systematic review and meta-analysis², which broadly concluded that both the surgical mask and the FFP3 respirator both achieve similar protection. In the guidance¹ for infection prevention and control in healthcare settings it is concluded that:

“Evidence suggests that use of both respirators and surgical face masks offer a similar level of protection, both associated with up to an 80% reduction in risk of infection.”²

Offeddu et al observed that:

“Overall, the evidence to inform policies on mask use in HCWs is poor, with a small number of studies that is prone to reporting biases and lack of statistical power.”

As a result In the UK the majority of NHS health care workers are now wearing surgical masks, and only those undertaking aerosol generating procedures or working within critical care are being provided with the FFP3 respirator, often with inadequate training and policing of their use.

We believe the dependence on this meta-analysis is flawed, because it is based on low quality papers and as concluded within the meta-analysis it did not take into account the generally poor compliance with use of PPE in the studies. The guidance¹ also displays no evidence of

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competence in occupational medicine, hygiene or safety. We have not been able to establish if anyone specialising in these disciplines have been involved in the evaluation.

In the early stages of the outbreak in the UK, HCW had access to FFP3 respirators when working with any confirmed or suspected COVID-19 case³, which was in line with practice in other areas of the world. While we note that CDC guidelines were downgraded⁴ to closely resemble UK guidance on 10 March 2020 we are not aware of any new evidence to justify this.

The level of risk for healthcare workers interacting with confirmed COVID-19 patients varies, there are reports from HCW that a number of UK hospitals have implemented COVID-19 wards, this could mean 30 patients within one area who all have the disease. There are also areas with uncertainty, such as emergency departments where there will be increasing numbers of unconfirmed cases walking through the doors. There is an important gap in our knowledge concerning the concentration of SARS-CoV-2 virus in the air in our hospitals and so in our opinion it is impossible to reliably identify tasks where a respirator is not necessary.

The fact that PHE is recommending equipment which it believes reduces exposure and risk of infection by 80% is erroneous as we consider the actual protective effect of surgical masks in practice is more likely to be around 65%^{5,6,7} (based on tests with inert particles rather than liquid aerosol containing virus). In contrast, FFP3 respirators are likely to offer around 95% reduction in aerosol exposure. This level of reduction in risk of infection offered by surgical masks with a potentially fatal agent would be completely unacceptable in any other occupational setting. The advice also displays no insight into the issues of training, reinforcement and monitoring of behaviours and we consider would not comply with the Management of Health and Safety Regulations 1999.

An example of good practice would be the nuclear industry, where no exposure is the target and widely achieved, and if someone were to die, there would be widespread concern and a public enquiry. Similarly and ironically those involved in working in semi-conductor clean rooms are provided with high standards of PPE equipment designed to protect the product and the highest standards are achieved.

While we appreciate that you are likely to be reviewing and improving the guidance on use of PPE in due course. We recommend that your risk assessment is urgently reviewed and that the reviewers include individuals with competence and practical experience in improving workplace health. In addition, we suggest that further research is urgently needed to measure the concentration of SARS-CoV-2 in the air of our hospitals and the virus contamination on surfaces to better advise when RPE is required to protect the health of our NHS staff.

You can be assured that if you wish any external support this will be readily available.

Yours Sincerely



Professor Ewan Macdonald -University of Glasgow
Professor John Cherrie – IOM Edinburgh
Dr Yvette Martyn- Specialist Trainee in Occupational Medicine

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3. Campbell D. I'm losing faith in the leadership': an NHS doctor's story. 16 Mar 2020. The Guardian. Available from: <https://www.theguardian.com/world/2020/mar/16/im-losing-faith-in-the-leadership-a-doctors-story-coronavirus>
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<https://www.washingtonpost.com/health/2020/03/10/face-mask-shortage-prompts-cdc-loosen-coronavirus-guidance/>
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6. Mueller W, Horwell CJ, Apsley A, Steinle S, McPherson S, Cherrie JW, Galea KS. (2018) The effectiveness of respiratory protection worn by communities to protect from volcanic ash inhalation. Part I: Filtration efficiency tests. Int J Hyg Environ Health; 221: 967-76.
7. Steinle S, Smeuwenhoek A, Mueller W, Horwell CJ, Apsley A, Davis A, Cherrie JW, Galea KS. (2018) The effectiveness of respiratory protection worn by communities to protect from volcanic ash inhalation. Part II: Total inward leakage tests. Int J Hyg Environ Health; 221: 977-84.

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